

AMENDMENTS TO THE CLAIMS

Please replace all prior versions, and listings, of the claims in the application with the following amended listing of claims:

1. (Currently Amended) A method of producing an angiospermous apomictic plant that exhibits an increased genetic stability for apomixis compared to an apomictic parent plant from which the apomictic plant is produced, the method comprising:
 - (a) producing a facultatively apomictic parent plant by:
 - selecting sexual plants from an angiospermous plant species, genus, or family, wherein the sexual plants are selected from *Antennaria*, *Sorghum* or *Tripsacum*;
 - cytoembryologically identifying sexual plants from ascertaining the developmental timing of the nongametophytic ovule and ovary tissues consisting of the nucellus, integument, pericarp, hypanthium, or pistil wall for each of the selected plants having divergent reproductive schedules of ovule development such that initiation of embryo sac formation in one sexual plant occurs at about the same time as or before meiosis in the other sexual plant relative to the developmental maturity of the nongametophytic ovule and ovary tissues selected from the group consisting of: nucellus, integument, pericarp, hypanthium, and pistil wall;
 - choosing a first and a second plant based on the cytoembryologically ascertained developmental timing of the nongametophytic ovule and ovary tissues, wherein the initiation of embryo sac formation of the first plant is at the same time or before meiosis in the second plant;
 - hybridizing the first plant with the second plant identified sexual plants ~~having divergent reproductive schedules of ovule development~~;
 - recovering hybrid seed therefrom;
 - sowing the hybrid seed; and
 - selecting a hybrid plant that is apomictic to be the apomictic parent plant;
 - and
 - (b) doubling the chromosome number of the apomictic parent plant, thereby producing an angiospermous apomictic plant with increased genetic stability for apomixis.

2. (Original) The method of claim 1, wherein the step of doubling the chromosome number comprises treating the parent plant with a spindle inhibitor.
3. (Original) The method of claim 2, wherein the spindle inhibitor comprises colchicine.
4. (Original) The method of claim 1, wherein the step of doubling the chromosome number comprises culturing the parent plant in tissue culture.
5. (Original) The method of claim 1, wherein the step of doubling the chromosome number is accomplished by B_{III} hybridization.
6. (Original) The method of claim 1, wherein the parent plant exhibits incomplete meiotic chromosome pairing such that meiotic chromosome pairing among the chromosomes of the resulting chromosome-doubled apomictic plant occurs within rather than among duplicated pairs of chromosomes.
7. (Original) The method of claim 1, wherein the parent plant is either an interspecific hybrid, so that the corresponding chromosome doubled plant is an allopolyploid, or an interracial hybrid, so that the corresponding chromosome doubled plant is a segmental allopolyploid.
8. (Original) The method of claim 1, further comprising the step of genetically modifying the apomictic plant to produce an apomictic plant in which female meiosis aborts.

9. (Original) The method of claim 8, wherein the step of genetically modifying the apomictic plant is accomplished by hybridization with a plant containing a meiotic mutant.

10. (Original) The method of claim 8, wherein the step of genetically modifying the apomictic plant is accomplished by hybridization with a plant of a different ploidy level so that the apomictic plant produced is of an odd ploidy level.

11-12. (Cancelled)

13. (Currently Amended) A method of producing an angiospermous apomictic plant that exhibits an increased genetic stability for apomixis compared to an apomictic parent plant from which the apomictic plant is produced, the method comprising:

(a) producing a facultatively apomictic parent plant by:

selecting sexual plants from an angiospermous plant species, genus, or family, wherein the sexual plants are selected from *Antennaria*, *Sorghum* or *Tripsacum*;

cytoembryologically identifying sexual plants from ascertaining the developmental timing of the nongametophytic ovule and ovary tissues consisting of the nucellus, integument, pericarp, hypanthium, or pistil wall for each of the selected plants having divergent reproductive schedules of ovule development such that initiation of embryo sac formation in one sexual plant occurs at about the same time as or before meiosis in the other sexual plant relative to the developmental maturity of the nongametophytic ovule and ovary tissues selected from the group consisting of: nucellus, integument, pericarp, hypanthium, and pistil wall;

choosing a first and a second plant based on the cytoembryologically ascertained developmental timing of the nongametophytic ovule and ovary tissues, wherein the initiation of embryo sac formation of the first plant is at the same time or before meiosis in the second plant;

hybridizing the first plant with the second plant identified sexual plants ~~having divergent reproductive schedules of ovule development~~

recovering hybrid seed therefrom;

sowing the hybrid seed; and
selecting a hybrid plant that is apomictic to be the apomictic parent plant;
and

(b) genetically modifying the apomictic parent plant so that female meiosis is aborted, thereby producing an angiospermous apomictic plant with increased genetic stability for apomixis.

14. (Original) The method of claim 13, wherein the step of genetically modifying the parent plant is accomplished by hybridization with a plant containing a meiotic mutant.

15. (Original) The method of claim 13, wherein the step of genetically modifying the parent plant is accomplished by hybridization with a plant of a different ploidy level so that the apomictic plant produced is of an odd ploidy level.

16. (Original) The method of claim 13, wherein the step of genetically modifying the parent plant is accomplished by B_{III} hybridization.

17. (Original) The method of claim 13, wherein the step of genetically modifying the parent plant is accomplished by transforming the parent plant with a promoter/gene construct that inhibits female meiosis.

18. (Original) The method of claim 13, further comprising the step of doubling the chromosome number of the apomictic parent plant.

19-28. (Cancelled)

29. (Currently Amended) A method of producing a genetically stabilized angiospermous apomictic plant, the method comprising:

~~cytoembryologically identifying two sexual plants from ascertaining the developmental timing of the nongametophytic ovule and ovary tissues consisting of the nucellus, integument, pericarp, hypanthium, or pistil wall of sexual plants, from an angiospermous plant species, genus, or family having divergent reproductive schedules of ovule development to be parent plants, such that initiation of embryo sac formation in one parent plant occurs at about the same time as or before meiosis in the other parent plant relative to the developmental maturity of the nongametophytic ovule and ovary tissues selected from the group consisting of: nucellus, integument, pericarp, hypanthium, and pistil wall, wherein the sexual plants are selected from *Antennaria*, *Sorghum* or *Tripsacum*;~~

choosing a first and a second sexual parent plant based on the cytoembryologically ascertained developmental timing of the nongametophytic ovule and ovary tissues of the sexual plants, wherein the initiation of embryo sac formation of the first plant is at the same time or before meiosis in the second plant;

doubling the chromosome number of at least one of the sexual parent plants;

hybridizing the first sexual parent plant with the second ~~two~~ sexual parent plant ~~plants~~ to produce hybrid seed therefrom;

sowing the hybrid seed; and

selecting a hybrid plant that is an angiospermous apomictic plant with increased genetic stability for apomixis compared to the sexual parent plants.

30. (Original) The method of claim 29, wherein the step of doubling the chromosome number comprises treating the selected sexual plant with a spindle inhibitor.

31. (Original) The method of claim 30, wherein the spindle inhibitor comprises colchicine.

32. (Original) The method of claim 29, wherein the step of doubling the chromosome number comprises culturing the selected sexual plant in tissue culture.

33. (Original) The method of claim 29, wherein the step of doubling the chromosome number is accomplished by B_{III} hybridization.

34. (Original) The method of claim 29, further comprising the step of genetically modifying the apomictic plant to produce an apomictic plant in which female meiosis aborts.

35. (Original) The method of claim 34, wherein the step of genetically modifying the apomictic plant is accomplished by hybridization with a plant containing a meiotic mutant.

36. (Original) The method of claim 34, wherein the step of genetically modifying the apomictic plant is accomplished by hybridization with a plant of a different ploidy level so that the apomictic plant produced is of an odd ploidy level.

37-39. (Cancelled)